

Health Assessment for

KING OF PRUSSIA

CERCLIS NO. NJD980505341

WINSLOW TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

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Agency for Toxic Substances and Disease Registry
U.S. Public Health Service

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, this Health Assessment has been conducted using available data. Additional Health Assessments may be conducted for this site as more information becomes available.

The conclusions and recommendations presented in this Health Assessment are the result of site specific analyses and are not to be cited or quoted for other evaluations or Health Assessments.

**HEALTH ASSESSMENT
KING OF PRUSSIA TECHNICAL CORPORATION
CAMDEN COUNTY
WINSLOW TOWNSHIP, NEW JERSEY**

Prepared by:
Division of Science and Research
New Jersey Department of Environmental Protection (NJDEP)
and
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New Jersey Department of Health (NJDOH)

Prepared For:
Agency For Toxic Substances and Disease Registry (ATSDR)

BACKGROUND

The King of Prussia Technical Corporation (KOP) site in Winslow Township, Camden County, New Jersey, is ranked 40th on the National Priorities List (NPL) of Superfund hazardous waste sites in New Jersey. The KOP site, comprising approximately 10.1 acres of generally barren sandy soil, is located northwest of Piney Hollow Road, midway between the Black Horse Pike and Folsom Road, within the 6,000 acre Winslow Wildlife Management Area. This area is located in extreme southern Winslow Township in Camden County immediately adjacent to Gloucester and Atlantic Counties, in a remote part of the New Jersey Pine Barrens. The Phase I draft report of the Remedial Investigation (RI) on the site was completed in July 1986.

The KOP site was purchased from Winslow Township in 1970 and was used by KOP from 1970 through 1973 when operations ceased. After the Township resumed ownership in 1976 for default in taxes, illicit dumping is suspected to have continued at this site, as a result of its proximity to the road and the lack of a fence (Personal communication, Environmental Resource Management). The site has recently been fenced. Winslow Township began construction of a police pistol range on the site in 1980; however, construction stopped when the Environmental Protection Agency (EPA) notified the township of the dangers involved with disturbing the site. In 1981, an Emergency Action Plan was prepared by the EPA. Four test wells were installed in 1975-1976 and subsequently sampled with additional samples taken in 1979 and 1980.

During its operational period, the KOP site was used as a waste treatment and disposal facility for hazardous industrial liquids. Located at the site are four large and two smaller lagoons, two rusting and torn tankers, and possible drum burial sites with an indeterminate number of buried and deteriorating carboys and drums.

During heavy rains and/or periods of high groundwater table, water from the site drains off the site toward the southwest boundary in a swale to form a small periodic pond approximately 400 feet from the site, and then to the Great Egg Harbor River immediately to the west. (Remedial Investigation Report)

COMMUNITY CONCERNS

According to available documentation and EPA, to date there have not been many health concerns expressed by the public concerning the King of Prussia site because of its remote, rural location. Issues associated with the site may be summarized as follows:

- * The severe contamination of ground water near the site.
- * The contamination of the Great Egg Harbor River located approximately 375 yards away.
- * The potential impact on the nearby New Jersey fish and wildlife area.
- * Accessibility of the site to hunters and recreational vehicles. (The accessibility of the site was reduced when the site was recently fenced.)

Other concerns expressed by the community were the perceived lack of a direct and accurate channel of communication with the agencies responsible for remediation of the site, the long time frame associated with remediation efforts, and the impact of the site on township real estate values.

ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

A. On-Site Contamination

Soil

Analysis of soil samples, collected during Phase I of the Remedial Investigation (RI), detected priority pollutant

compounds in shallow soils, including heavy metals, volatile organic compounds (VOCs), and other organic contaminants. Soil on the site consists of fine-grained, tan, silty sand, together with coarse gravel at some locations at the site. A variable, mostly thin layer of purple tinged/stained sand lies on or near the surface of the ground over large portions of the site. In some areas, ants bring this purple sand up to the soil surface, as they dig their ant holes. Tests have indicated that the purple substance is methylene blue.

There are quality assurance/quality control concerns, along with field operations concerns, with some of the soil sampling performed during Phase I of the RI. Additional sampling will occur during Phase II to correct this matter. The levels of compounds identified in soil samples and tanker samples are listed in Table 1. Phase II of RI will include additional soil sampling. Visible signs of ponding and stressed vegetation have been noted in the area of the swale. Analysis of sediments from the drainage swale revealed the presence of heavy metals that are being carried off-site by the swale (Table 2).

Lagoon

Lagoon 5 was the only lagoon with quantifiable base neutrals and pesticides. Lagoon 4 had sludge that had a total organic halogen level of 120 ppm. Several unidentified organics were in the various lagoons. (Remedial Investigation Report) They are summarized as follows:

- Lagoon 1: One unidentified alkane
- Lagoon 4: Four unidentified alkanes
- Lagoon 6: Two unidentified alkanes
- Several unidentified phthalates

The concentration of other chemicals in the lagoons are presented in Table 3.

Magnetic Survey

Data from a magnetic survey, conducted by EPA's consultant, indicated that buried metallic debris may be present 4 to 12 feet below the surface, in a number of areas. If buried metallic objects are present, they may be potential sources for contamination.

Surface Water

There is usually no standing surface water on the site, due to the high permeability of the sandy soil. During wet

periods, however, a small pond forms immediately adjacent to the site along the swale that conducts runoff to the Great Egg Harbor River, approximately 1,050 feet from the site boundary. Heavy metal concentrations detected in this surface water are listed in Table 4. Sampling, by EPA's consultant demonstrated that heavy metals are being transported by this swale, and/or the groundwater beneath the swale, toward the river. At the time the sampling occurred (March 1986), surface water quality in the Great Egg Harbor River had been altered only with respect to copper. Copper was not in the river above the KOP site. Below the site, copper is present in water at a concentration of 0.11 ppm, which is less than the drinking water limit for human health (1.3 ppm), but slightly higher than the protection limit for freshwater aquatic biota (0.043 ppm). Further downstream, dilution and adsorption in the sediment had reduced the concentration of copper by 50 percent, to approximately aquatic biota protection limits.

Groundwater

The nearest groundwater user is a residence about one mile northeast and upgradient of the site. An industrial property 2,000 feet south of the site contains a production well, for industrial use only, that was uncontaminated when last tested. The local groundwater flow direction and surface water drainage from the site are toward the southwest, in the direction of the Great Egg Harbor River. However, the regional groundwater flow direction is to the southeast. There are no potable wells within 3 miles downgradient of the site. Neither of the nearby wells was tested during Phase I of the RI. Other homes in the Town of Folsom, about 2 miles southeast of the site, are on private wells and have not been affected by any off-site contamination from the KOP site.

EPA's consultant evaluated groundwater quality by comparing contaminant levels in the on-site and downgradient wells with the levels in the upgradient background well. Priority pollutants were not detected in the background well, except zinc which was present at 0.09 ppm. (The drinking water quality limit for zinc is 5 ppm.) The concentrations of contaminants detected in the downgradient monitoring wells are presented in Table 5.

Air

No air sampling has been conducted at the KOP site to date. Further, insufficient data are available to identify possible receptors at risk.

B. Off-Site Contamination

A large groundwater plume and sediments being carried by surface water are the major pathways of off-site migration. The plume has moved off-site in a generally southwesterly direction toward the river. The surface water and sediments, in runoff from the site, contain inorganic priority pollutant metals and organics. A small seasonal pond sometimes forms off-site prior to emptying into the Great Egg Harbor River to the west. Estimates of the depth of the conductive plume range from 35 to 80 feet beneath the ground surface. Visibly stressed vegetation indicates run-off to be an environmental pathway of concern.

QUALITY ASSURANCE/QUALITY CONTROL

The reports and other material reviewed for this document indicated that all laboratory chemical analyses were conducted by S-R Analytical, Inc., Cherry Hill, New Jersey; that chain-of-custody procedures were followed for the samples obtained during the field investigation; and that methods utilized for the chemical analyses of priority pollutants were in accordance with EPA accepted methodologies. However, several areas of concern and deficiencies were noted, such as: chemicals (vinyl chloride) being referred to in some reports but not others; many chemicals primarily organic, were detected in the analysis blanks (any chemical that was detected in the analysis blanks were deleted from further consideration in this report); samples were taken that were neither analyzed nor reported; and some data sheets were reduced to a small size that precludes reading. However, the data contained in these reports is of sufficient quality and accuracy for use in Phase I of RI/FS, and in a qualitative assessment. Discrepancies and concerns noted need to be addressed in later phases of the RI/FS.

SITE VISIT AND PHYSICAL HAZARDS

The KOP site (10.1 acres) was visited on September 8, 1988, by Department of Environmental Protection staff. The site is surrounded by a new (installation completed late in July 1988) 8 foot tall cyclone fence, with three gates secured with padlocks. At the front gate is a "NO TRESPASSING" sign and a storage/office trailer. Prior to fencing of the site, the area was open to the public with the attendant dumping of household articles that frequently accompanies such usage. Evidence in the form of spent shotgun shells indicates that the

area was used for hunting and/or practice shooting. Since the new fence was installed, there has been no evidence of attempted unauthorized use.

Maps of this site, in the site reports, are inaccurate with respect to the location of fence lines, wells, and location of possible contamination areas due to buried carboys and drums etc. New maps are being prepared to correct this situation.

Although identified on earlier aerial photographs, lagoons 2 and 3 are not shown on current maps of the site. Remnants of the liner material appear to be a rubberized fabric, reinforced with a fabric/canvas core material. Lagoons 1 and 6 are filled in, whereas lagoons 5 and 6 are large depressions in the ground, with liner material protruding above the sandy soil around the edges. Lagoon 5 contains moderate amounts of a tall, grass-like vegetation and two small pine trees growing on opposite sloping sides of the lagoon. Lagoon 4 has much less vegetation without trees and has been considerably filled-in as compared to Lagoon 5.

The remnants of two tankers visible on KOP are not thought to have been part of the process once used there. They are badly rusted, torn open, and leaking. Although they now contained solid waste material (that has been analyzed), it is unknown if they once contained contaminated waste.

The site is largely depopulated of pine trees and is open with small to moderate amounts of grass and weeds. The land immediately surrounding the site is forested with scrub pine trees. The soil is sandy with some evidence of wind causing erosion (covering areas of purple-stained sand). The water table is very high, averaging only 6 to 12 feet below the ground surface. The land slopes very gently toward the river. There is no evidence of runoff apart from the swale. The soil at this site is highly permeable and porous.

The Fish and Game Office at Williamstown is in a small house across and upgradient from the Great Egg Harbor River approximately 1 mile from the site. It is estimated that the Fish and Game facility would support no more than 3-5 personnel. There is a single family residence on the same side of the river as the site, approximately 1 mile upgradient. Local surrounding areas are used for recreational purposes such as hiking, hunting, bird watching, and fishing.

Several areas on-site may present physical hazards. These include the unstable ground area surrounding the carboy partial

burial area and other areas where buried drums are known/suspected. In these areas there is evidence of ground subsidence possibly due to containers collapsing beneath the ground surface.

POTENTIAL ENVIRONMENTAL AND HUMAN EXPOSURE PATHWAYS

A. Environmental Pathways

On-Site

In Phase I of the RI/FS, soils, groundwater, and surface water were identified as the primary media in which the contamination has been detected. Results of soil sampling during Phase I of the RI/FS identified the potential for surface and groundwater contamination. Sampling of this will be part of the continued investigation in Phase II activities. Preliminary investigation of surface water samples and sediments from the drainage swale indicated the presence of a number of heavy metals above acceptable limits (see Tables 2 and 3).

Off-Site

The contaminants listed in Tables 2 and 3 are migrating off-site, leaching into the soils, water table, and Cohansey Aquifer below and adjacent to this site (Remedial Investigation Report). Migration via air pathways is also possible. Analysis of drainage water and sediments from the swale indicates that heavy metals are present in levels exceeding New Jersey drinking water limits and New Jersey Soil Cleanup Objectives. The heavy metal-polluted water is emptying into the small transient pond and later into the river. Contaminants in the surface water and sediments could impact fish population or bioaccumulate in the fish. The soil in this region is sandy and has an above average percolation rate. Therefore, this polluted surface water is a conduit for moving contaminated water to the Great Egg Harbor River, to groundwater, and ultimately to the Cohansey Aquifer which underlies the site and supplies much of southern New Jersey. Copper is the only identifiable contaminant from this site presently degrading the water quality of the River.

B. Human Exposure Pathways

Exposure pathways of concern at this site include: inhalation, dermal absorption, ingestion, and ingestion of contaminated aquatic biota. The utilization of contaminated

groundwater appears to be the most significant human exposure pathway. This site is within the 6,000 acre Winslow Wildlife Management Area which is used for recreation and hunting. Probable uses by residents and visitors to the wildlife area and the Great Egg Harbor River include hiking, camping, birding, picnicking, fishing, hunting, and possibly wading. Private wells service the drinking water needs of residents that live in the area of the site. City drinking water is not available.

Human exposure to contaminated surface soils may occur via ingestion or dermal contact. Since access to the site is now restricted by a fence, exposure of on-site receptors is limited to those personnel involved with the remediation of this site. However, since a significant component of the contamination has been eroded off-site by run-off, and contaminant migration via runoff, people who are outside the restricted access area may be exposed to contamination. A significant degree of disturbance in the surface or subsurface soils in the contaminated areas off-site has the potential to increase the human and environmental exposures.

Surface contamination in the wooded area is limited to the drainage swale. The risk to human or wildlife exposed to contamination is minimal because of the relatively low concentrations in the area and the short duration of any such exposure. The concentrations of contaminants in the river will be low, due to the effects of dilution.

Inhalation exposure pathways have not yet been adequately characterized. The relatively high concentrations of inorganic constituents in surface and subsurface soil samples collected during the RI suggest inhalation may be an exposure pathway. Inhalation of contaminants adsorbed to dust particles, as well as inhalation of volatile organic chemicals, from the site, is a potential concern.

DEMOGRAPHICS

The area of the site does not have a large permanent population base. The area is primarily rural, and KOP is surrounded by the 6,000 acre Winslow Wildlife Management Area. The estimated population in a three mile radius area is estimated to be at least 150 people.

Additional demographic information is needed, including the identification of potable wells near the site, and within a 2 to 3 mile radius of the site, and a characterization of the population close to the site (i.e., identification of sensitive populations).

EVALUATION AND DISCUSSION

Phase I studies were designed primarily to determine the nature of the contaminants, not the extent of the contamination at the site. Future studies will concentrate on the more quantitative aspects required before effective remediation procedures can be recommended.

It should be noted that some of the samples taken in the Phase I portion of work were not properly collected. Phase II sampling was designed to correct for this deficit. Hence, Phase II results may reveal contamination that was not indicated in the Phase I portion of this work.

On-site contamination consists principally of heavy metals with highest concentrations being found for chromium, copper, nickel, and zinc. Probable sources of contamination are a drum burial area, a carboy area, soils northwest of several lagoons, four confirmed lagoons, surface soils near rusted tankers, and soils located in the eastern corner of the site.

Soil and tanker samples exceeded New Jersey Soil Cleanup Objectives for beryllium, cadmium, chromium, copper, mercury, nickel, silver, volatile organics, and oil and grease. Lagoon soil samples exceeded New Jersey Soil Cleanup Objectives for arsenic, beryllium, cadmium, copper, lead, nickel, and zinc. Groundwater monitoring wells exceeded New Jersey drinking water limits for chromium, copper, mercury, iron, 1,1-dichloroethene, trans-1,2-dichloroethene, 1,1,1-trichloroethane, trichloroethene, tetrachloroethene, and bis (2-ethylhexyl) phthalate. Drainage swale surface water exceeded New Jersey drinking water limits for chromium, iron, and lead. Drainage swale sediments exceeded New Jersey Soil Cleanup Objectives for beryllium, chromium, copper, and selenium. No standards are available for some of the contaminants at this site. These are indicated by blanks on the respective tables.

Additional contamination may occur in buried drums that are suspected to exist on the site at depths between 4 and 12 feet. Preliminary information indicates soils in the area of the carboys contain at least nickel, zinc, chromium, lead, and cadmium.

Surface runoff transports contaminants via erosion and sedimentation. Groundwater flows southwest from the site to the Great Egg Harbor River. Although the contaminant plume requires better characterization, the plume may have reached the river and might be approximately 1,000 feet wide.

No known domestic groundwater users are known to have been affected by the groundwater contaminants. When the peak concentrations in the groundwater plume reach the river, water quality will be degraded. However, the effects on human health and aquatic biota may be minimal as a result of downstream dilution.

CONCLUSIONS AND RECOMMENDATIONS

On the basis of the information reviewed, the King of Prussia Technical Corporation Site is considered to be a potential public health concern because humans may be exposed to hazardous substances at concentrations that may result in adverse health effects. As noted in Potential Environmental and Human Exposure Pathways section, human exposure to heavy metals may occur and may have occurred in the past via inhalation, dermal absorption by contact with contaminated soil, and ingestion of contaminated aquatic biota.

Discrepancies and areas of concern expressed in this report regarding QA/QC issues, including illegible data and report sheets, and samples taken but not reported, need to be addressed and/or clarified.

Lagoons 2 and 3, previously identified on aerial photographs, are not shown on the current mapping of this site, nor discussed in the available reports. The location and characterization of the materials associated with these lagoon locations should be further investigated, and these findings should be incorporated into future phases of this project. In addition, materials buried in drum and carboy areas need to be better characterized, and air sampling for mercury and VOC levels needs to be conducted.

Warning signs need to be posted at off-site locations where soil is heavily contaminated with heavy metals to minimize inadvertent exposure of casual users in these areas.

Within approximately one mile upgradient and across Piney Hollow Road there is a single family residence assumed to be on a private well. In this same general area several real estate signs are posted, indicating that further development of this area is imminent. Results of the analyses of all private wells in the surrounding area and test wells located in areas where private development is likely to occur in the near future, need to be included in Phase II of the RI/FS. A land use policy that is consistent with these findings and is protective of human health concerns should be developed or modified for the surrounding area.

If contaminant levels in the river increase to levels that may be hazardous to human health, signs should be erected warning against ingestion of all aquatic species.

A sizable percentage of the contaminated materials may have escaped into the air, groundwater, and subsurface soils. Future cleanup phases should be expedited to minimize continued migration of contaminated material into the environment.

This health assessment focuses on public health issues. Environmental issues and natural resources damage issues, which may play a key role in the remediation of the site, are not focused upon in the assessment. The emphasis of the health assessment on public health is not intended to diminish the importance to remediation based upon environmental damage.

There are potential exposure pathways that have not yet been adequately characterized or addressed. In particular, the locations of potable wells need to be identified and wells that could be impacted by the site need to be sampled. More information is needed before a decision can be made on whether a health study is warranted. When this information becomes available, the health assessment will be revised.

In accordance with CERCLA as amended, the King Of Prussia Technical Corporation site has been evaluated for appropriate follow-up with respect to health effects studies. Since human exposure to on-site and off-site contaminants is not documented, the King Of Prussia Technical Corporation site is not being considered for follow-up health studies. However, if data become available suggesting that human exposure to significant levels of hazardous substances is currently occurring or has occurred in the past, ATSDR and NJDOH will reevaluate this site for any indicated follow-up.

This Health Assessment was prepared by the State of New Jersey Departments of Environmental Protection and Health, under a Cooperative Agreement with the Agency for Toxic Substances and Disease Registry. The Division of Health Assessment and Consultation and the Division of Health Studies of ATSDR have reviewed this Health Assessment and concur with its findings.

REFERENCES

- ATSDR Site Summary, King of Prussia, CERCLIS No. 7-19-88.
- Field Investigations of Uncontrolled Hazardous Waste Sites, Task Report to the Environmental Protection Agency, Contract No. 68-01-6056, Mitre Model Scoring of King of Prussia, New Jersey, TDD No. HQ-8109-01. Ecology and Environment, Inc., October 1981.
- King of Prussia, Comments to Draft Remedial Investigation Report.
- New Jersey Safe Drinking Water Act, N.J.A.C. 7:10- 1.1 through 7.3, November 1985.
- New Jersey Department of Environmental Protection (NJDEP), Summary of Approaches to Soil Cleanup Levels, 1987.
- New Jersey Drinking Water Quality Institute: Maximum Contaminant Level Recommendations for Hazardous Contaminants in Drinking Water, NJDEP, 1987.
- New Jersey Department of Environmental Protection: Division of Water Resources Division Order No. 64, Groundwater Cleanup Criteria, September 1986.
- Supplemental Work Plan for Remedial Investigation Field Activities, King of Prussia Site, Camden County, New Jersey, Prepared by: NUS Corporation, Pittsburgh, PA., Approved by: EBASCO Services Incorporated, Lynhurst, NJ., EPA Work Assignment Number 108-2615 under EPA Contract Number 68-01-7250, July, 1987.
- Draft Remedial Investigation Report for the King of Prussia Technical Corporation Site in Winslow Township, Camden County, New Jersey, Volume One: Narrative Report, Volume Two: Appendices, Prepared for: U.S. Environmental Protection Agency, Region II, New York, Prepared by: SMC Martin Inc., Valley Forge, PA, Reference 8925- 040-80040, July 1986.
- Case Manager and Technical Coordinator. Personal communication. NJDEP (New Jersey Department of Environmental Protection), Division of Hazardous Site Mitigation.

Table 1. Soil and Tanker Samples

Contaminant	Concentration (PPM)	New Jersey Soil Cleanup Objectives (1) (PPM)
Beryllium	1.0 - 16	1
Chromium	5.0 - 570	100
Copper	5.9 - 1,100	170
Mercury	0.24 - 100	1
Nickel	6.6 - 470	100
Silver	18	5
Thallium	10 - 24	
Organic Carbon	190 - 3,500	
Organic Halogens	150 - 1,600	
Oil and Grease	50 - 3,000	100
Total Volatile Organic Compounds	4	1
Lagoon 5 Sludge alpha BHC (Lindane)	(PPB) 3,000	

(1) New Jersey Department of Environmental Protection (NJDEP), Summary of Approaches to Soil Cleanup Levels, 1987. Numbers indicate NJDEP Cleanup Objective in parts per million. PPM = parts per million = milligrams per kilogram. PPB = parts per billion.

Table 2. Metals Detected in Drainage Swale Sediment

Contaminant (1)	Maximum Concentration (PPM)	New Jersey Soil Cleanup Objectives (PPM)
Beryllium	8.3	1
Chromium	430	100
Copper	760	170
Selenium	5.4	4

-- PPM = parts per million.

(1) New Jersey Department of Environmental Protection (NJDEP), Summary of Approaches to Soil Cleanup Levels, 1987. Numbers indicate NJDEP Cleanup Objective in parts per million (PPM = milligrams per kilogram).

Table 3. Metals and Selected Parameters from Lagoon Soil Samples

Contaminant (1)	Maximum Concentration (PPM)	New Jersey Soil Cleanup Objectives (PPM)
Arsenic	300	20
Beryllium	100	1
Cadmium	18	3
Chromium	5,000	100
Copper	3,700	170
Lead	290	250
Nickel	1,400	470
Thallium	45	
Zinc	1,600	350
Organic Carbon	2.900	
Organic Halogens	120	
Oil and Grease	1,200	100

 (1) New Jersey Department of Environmental Protection (NJDEP), Summary of Approaches to Soil Cleanup Levels, 1987. Numbers indicate NJDEP Cleanup Objective in parts per million.

Table 4. Metals Detected in Drainage Swale (Surface Water)

Contaminant	Maximum Concentration (PPM)	Drinking Water Guidance (1) (PPM)
Chromium	0.20	0.05
Iron	1.1	0.3

 --- PPM = parts per million.

(1) New Jersey Safe Drinking Water Act, N.J.A.C. 7:10 - 1.1 through 7.3.

Table 5. Contaminants in the Groundwater Monitoring Wells

Contaminant	Maximum Concentration (PPM)	Drinking Water Guidance (1) (PPM)
Metals:		
Beryllium	0.12	
Chromium	0.55	0.05
Copper	14.00	1.0
Mercury	0.003	0.002
Iron	36.00	0.3
Volatile Organics:		
	(PPB)	(PPB)
1,1-Dichloroethene	26	1 (2)
Trans-1,2-Dichloroethene	25	10 (2)
1,1,1-Trichloroethane	280	26 (2)
Trichloroethene	360	1 (2)
1,1,2,2-Tetrachloroethane	930	
Tetrachloroethene	1500	1 (2)
Base Neutrals:		
Bis (2-Ethylhexyl) Phthalate	25	

 --- PPM = parts per million = milligrams per liter.

- (1) New Jersey Safe Drinking Water Act, N.J.A.C. 7:10 - 1.1 through 7.3.
- (2) New Jersey Drinking Water Quality Institute: Maximum Contaminant Level Recommendations for Hazardous Contaminants in Drinking Water. 1987. As part of New Jersey Safe Drinking Water Act N.J.A.C. 7:10 - 1.1 through 7.3.